



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,544	03/06/2007	Noriyuki Suzuki	187765/US-465122-00026	5146
30873 7590 08/03/2010 DORSEY & WHITNEY LLP INTELLECTUAL PROPERTY DEPARTMENT 250 PARK AVENUE NEW YORK, NY 10177				
EXAMINER BONK, TERESA				
ART UNIT 3725		PAPER NUMBER		
MAIL DATE 08/03/2010		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/579,544

Applicant(s)

SUZUKI ET AL.

Examiner

TERESA M. BONK

Art Unit

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 11-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trausi et al. (hereafter "Trausi") (US Patent 5,507,164), previously presented in view of Kuttner et al. (hereafter "Kuttner") (US Patent 6,044,895), newly presented.

With regards to **claim 11**, Trausi discloses a press-forming device for press-forming at least one portion of a material (part or billet) according to at least one predetermined condition, comprising: at least one arrangement of:

a material characteristic input arrangement configured to provide at least first one characteristic from material characteristics comprising a thickness (diameter) of the at least one portion of the material, an elongation (height) of the at least one portion of the material, a stress-strain relation equation (strain rate) [equation: Column 4, line 48] for the at least one portion of the material and temperature [Column 4, lines 61-65];

a state variable detector (sensor) configured to measure at least one of state variables comprising a punch reaction (rate of movement), a metal mold temperature (temperature of heating elements/furnace) during the formation of the at least one portion of the material [Step S7 Figure 4, Column 1, lines 49-52, Column 2, lines 43-45, and Column 5, lines 32-33];

a processing condition computer arrangement (computer 30) configured to determine at least one particular processing condition from at least one of a forming speed of the at least one portion of the material as a function of at least two of the at least one first characteristic [Column 5, lines 38-59]; and

a processing condition controller configured to control the at least one processing condition from processing conditions comprising at least one of a punch (from model: ram 20.3) movement speed based on the at least one processing condition [Column 5, lines 60+].

With regards to **claim 12**, Trausi discloses wherein the material characteristic input arrangement comprises at least one a manual input device (keyboard 18).

Trausi discloses the invention substantially as claimed except for wherein a processing condition computer arrangement configured to determine from a first moment to a second moment the processing condition, wherein the determination is performed using (i) a first influence function matrix for indicating a relation between a material characteristic of the material and a correction amount of the at least one particular processing condition, and (ii) a second influence function matrix for indicating a relation between a state variable and the correction amount of the at least one particular processing condition. **Kuttner** is relied upon to teach a control system for a metal manufacturing process having a processing condition computer arrangement (11, 12) configured to determine from a first moment to a second moment

the processing condition [speed, temperature, and/or material profile], wherein the determination is performed using (i) a first influence function matrix [Column 3, lines 10-16] for indicating a relation between a material characteristic of the material and a correction amount of the at least one particular processing condition [Actual value of the material thickness & regulation or correction of the material thickness, Figure 1], and (ii) a second influence function matrix for indicating a relation between a state variable and the correction amount of the at least one particular processing condition [Actual value of the material profile & regulation or correction of the material thickness, Figure 1; Claim 6]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Kuttner's capability of having correction values for control purposes obtained from matrices because combining prior art elements according to known methods yields predictable results.

With regards to **claim 13**, Trausi discloses press-forming method for press-forming at least one section of a material according to at least one predetermined forming condition, comprising:

providing at least first one characteristic from material characteristics comprising a thickness (diameter) of the at least one portion of the material, an elongation (height) of the at least one portion of the material, a stress-strain relation equation (strain rate) [equation: Column 4, line 48] for the at least one portion of the material, and temperature [Column 4, lines 61-65];

measuring at least one of state variables comprising a punch reaction (rate of movement), a metal mold temperature (temperature of heating elements/furnace) during the formation of the

at least one portion of the material [Step S7 Figure 4, Column 1, lines 49-52, Column 2, lines 43-45, and Column 5, lines 32-33];

determining at least one particular processing condition from at least one of a forming speed of the at least one portion of the material as a function of at least two of the at least one first characteristic [Column 5, lines 38-59]; and

controlling the at least one processing condition from processing conditions comprising at least one of a punch (from model: ram 20.3) movement speed based on the at least one processing condition [Column 5, lines 60+].

With regards to **claim 14**, Trausi discloses wherein the at least first one characteristic is provided using at least one of a manual input procedure (operator enters parameters on keyboard 180.

Trausi discloses the invention substantially as claimed except for wherein a processing condition computer arrangement configured to determine from a first moment to a second moment the processing condition, wherein the determination is performed using (i) a first influence function matrix for indicating a relation between a material characteristic of the material and a correction amount of the at least one particular processing condition, and (ii) a second influence function matrix for indicating a relation between a state variable and the correction amount of the at least one particular processing condition. **Kuttner** is relied upon to teach a control system for a metal manufacturing process having a processing condition computer arrangement (11, 12) configured to determine from a first moment to a second moment the processing condition [speed, temperature, and/or material profile], wherein the determination is performed using (i) a first influence function matrix [Column 3, lines 10-16] for indicating a

relation between a material characteristic of the material and a correction amount of the at least one particular processing condition [Actual value of the material thickness & regulation or correction of the material thickness, Figure 1], and (ii) a second influence function matrix for indicating a relation between a state variable and the correction amount of the at least one particular processing condition [Actual value of the material profile & regulation or correction of the material thickness, Figure 1; Claim 6]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Kuttner's capability of having correction values for control purposes obtained from matrices because combining prior art elements according to known methods yields predictable results.

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trausi in view of Kuttner and Bowden (US Patent 3,976,981), newly presented.

With regards to **claim 15**, Trausi discloses press-forming method for press-forming at least one section of a material according to at least one predetermined forming condition, comprising:

measuring at least one variable from state variables which comprise a punch reaction (rate of movement), a metal mold temperature (temperature of heating elements/furnace), and a workpiece deformation amount (billet dimensions and new billet location) for every formation of the at least one section of the material [Step S7 & S9 Figure 4, Column 1, lines 49-52, Column 2, lines 43-45, and Column 5, lines 32-33];

determining at least one processing condition from at least one type a forming speed using the comparison result [Column 5, lines 38+ and Column 6, lines 1-6]; and

controlling at least one processing condition of processing conditions which comprise a punch (ram) movement speed based on the at least one processing condition [Column 5, lines 60+].

With regards to **claim 16**, Trausi discloses providing at least one characteristic from material characteristics comprising a thickness (diameter) of the at least one portion of the material, an elongation (height) of the at least one portion of the material, a stress-strain relation equation (strain rate) [equation: Column 4, line 48] for the at least one portion of the material, and temperature [Column 4, lines 61-65]; wherein the at least one processing condition is determined from the at least one characteristic and the at least one variable for every formation of the at least one portion measured for the at least one variable [Column 5, lines 38+ and Column 6, lines 1-6].

With regards to **claims 17 and 18**, Trausi discloses wherein the comparison result is obtained by comparing a difference between a past state variable and the at least one variable, a moving average value and a predetermined value within at least one of a predetermined time period or a predetermined number of repetitions [Column 5, lines 38-60].

Trausi discloses the invention substantially as claimed except for comparing at least one variable with at least one previously-measured or previously-obtained one of the state variable to generate a comparison result. **Bowden** is relied upon to teach a control system for a manufacturing process [Column 1, lines 10-15] having a comparator (44) for comparing at least one variable [it is noted that temperature can be one of the variables, Column 10, lines 1-6 and

Column 13, lines 20-35] with at least one previously-measured or previously-obtained one of the state variable to generate a comparison result (out put signal; Column 9, lines 9-15, 55-61).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a comparator in Trausi's controller because combining prior art elements according to known methods yields predictable results.

Trausi discloses the invention substantially as claimed except for determining from a first moment to a second moment the processing condition, wherein the determination is performed using an influence function matrix for indicating a relation between a state variable and a correction amount of the at least one processing condition. **Kuttner** is relied upon to teach a control system for a metal manufacturing process comprising determining from a first moment to a second moment the processing condition [speed, temperature, and/or material profile], wherein the determination is performed using an influence function matrix for indicating a relation between a state variable and a correction amount of the at least one processing condition [Column 3, lines 10-16 and Actual value of the material thickness & regulation or correction of the material thickness, Figure 1 and Claim 6]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Kuttner's capability of having correction values for control purposes obtained from matrices because combining prior art elements according to known methods yields predictable results.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa Bonk whose telephone number is 571-272-1901. The examiner can normally be reached on Monday-Friday 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on 571-272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Teresa M. Bonk/
Examiner, Art Unit 3725